

Australasian Bittern Survey

Summary June 2021

In spring and summer 2020 BirdLife Australia surveyed Lake Pleasant View and Big Boom Swamp for the endangered Australasian Bittern (*Botaurus poiciloptilus*) as part of a contracted service for South Coast NRM.

The Australasian Bittern is a heavy-set elusive heron that is principally associated with fresh-water well vegetated wetlands. Males produce distinctive booming calls during the breeding season in spring to attract mates and defend territories.

The aim of the survey was to assess the wetlands for the presence of Australasian Bittern and estimate the numbers of bitterns present. Acoustic recorders were the principal survey method used to record the booming call of males during the breeding season in spring.

Survey Method

Song Meter SM4 Acoustic Recorders (source *Wildlife Acoustics*) were deployed at Lake Pleasant View (Figure 1) and Big Boom Swamp in late September 2020. The units were set to record for 2.5 hours before sunrise and 1 hour after sunset. These are the peak times of day that male bitterns call during the breeding season.



Figure 1: SM4 Song Meter and solar power source set up on the fringe of Lake Pleasant View.

Audio files were analysed manually for bittern calls using *Audacity* software (to boost recordings in the hertz range of bittern calls) and *Song Scope* software to find likely bittern calls (Pickering, 2021). Only a subset

of recordings were processed, usually every 5 nights and when conditions were not too windy.

Survey Findings

Recordings processed for Lake Pleasant View were from 5 October 2020 to 1 January 2021 and for Big Boom were from 24 September to 31 December 2020.

Australasian Bittern presence was confirmed at both wetlands from acoustic recordings (Figure 2).

At Big Boom Swamp, one Australasian Bittern regularly called between late September and early December. In this time calling was detected on 14 of 15 nights processed (93% of nights) and calling rates of 7 to 49 calls per hour were recorded. On several recordings 2 other distant calling Australasian Bittern were detected. These individuals were calling from nearby wetlands, up to several kilometres away.

At Lake Pleasant View, one Australasian Bittern regularly called between mid-October and mid-December. In this time, calling was detected on 15 of 16 nights processed (94% of nights) and calling rates of 3 to 31 calls per hour were recorded. On 2 nights (26 October and 19 November) a second Australasian Bittern was seemingly detected calling on several occasions only.

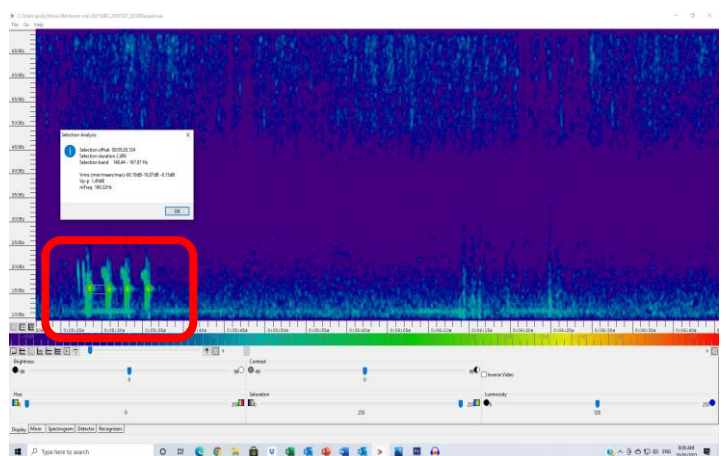


Figure 2: Call spectra of the Australasian Bittern that called loudly and regularly at Big Boom swamp.

At both wetlands there were two peaks in calling rate across the spring and early summer, with the second

peak in calling seeming to coincide with after a heavy rainfall event exceeding 20mm of rain in late October near Big Boom and early November near Lake Pleasant View.

Table 1: Comparative numbers of Australasian Bittern detected on recording units in the spring of 2019 and 2020 at Lake Pleasant View (LPV) and Big Boom Swamp.

Site	2019	2020	Comments
LPV	2	2	2 additional distant birds calling in 2019 (in another wetland)
Big Boom	2	1	2 additional distant birds calling in 2020 (in another wetland)

Australian Little Bitten was not recorded at either Big Boom or Lake Pleasant View in 2020.

Conclusions

Australasian Bitterns were confirmed present at both Big Boom Swamp and Lake Pleasant View during spring 2020.

The regular and sustained calling by Australasian Bittern at both wetlands indicates that conditions were good for breeding over the entire spring and into early summer.

While the number of calling birds was similar to 2019 for both wetlands (Table 1), calling rates were much higher particularly at Big Boom swamp, suggesting that wetland conditions for breeding in 2020 were improved on 2019. Higher rainfall through the winter of 2020 and several significant rainfall events through the spring likely kept water levels in the wetlands at suitable depths for nesting over a longer period through spring and early summer and potentially supported greater food resources. Water levels are critical for bittern during the breeding season, influencing the availability of food to raise chicks and protection of the nest from predators.

Nesting attempts and breeding success were not confirmed at either wetland. This requires location of nests which can be very challenging and disruptive to breeding pairs and monitoring of nests using non-invasive methods such as cameras.

In spring 2020 it has been positive to confirm the continued presence of Australasian Bittern and potentially the continued use of Lake Pleasant View as a breeding wetland after a fire in April 2020 burnt fringing paperbark vegetation and into the sedges of the wetland (Figure 3).



Figure 3: A fire in April 2020 at Lake Pleasant View burnt significant parts of the vegetation fringing the wetland as well as sedges on the edge and in the wetland.

Acknowledgements

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For further information please contact Vicki Stokes, WA Program Manager at vicki.stokes@birdlife.org.au or (08) 9287 2204